WHAT IS CLAIMED IS:

1   1. A method of visualization of a part having metallic
2   objects against a light colored non-metallic background
3   comprising:
4   illuminating the part with electromagnetic radiation
5   that is linearly polarized in a predetermined first
6   direction, and
7   forming an image of electromagnetic radiation
8   reflected from the part viewed through a linear
9   polarization filter oriented for passing electromagnetic
10   radiation that is linearly polarized in a second direction
11   that is substantially orthogonal to the first direction,
12   whereby in the formed image, an improved contrast
13   between the metallic objects and the background is
14   produced.

1   2. The method as claimed in Claim 1, further
2   comprising recognizing the metallic objects in the formed
3   image.

1   3. The method as claimed in Claim 1, wherein the
2   electromagnetic radiation is light, and the image is formed
3   by a camera.

1   4. The method as claimed in Claim 2, wherein the
2   electromagnetic radiation is light, the image is formed by
3   a camera of a computer vision system, and said recognizing
4   is performed by the computer vision system.

1   5. The method as claimed in Claim 1, wherein the part

2   is a ball grid array, the light colored background is

3   dielectric, and the metallic objects are balls arranged in

4   an array carried by the dielectric.

1   6. The method as claimed in Claim 2, wherein the part

2   is a ball grid array, the light colored background is

3   dielectric, and the metallic objects are balls arranged in

4   an array carried by the dielectric.

1   7. Apparatus for visualization of a part having

2   metallic objects against a light colored non-metallic

3   background comprising:

4   one or more sources for illuminating the part with

5   electromagnetic radiation that is linearly polarized, at

6   least one of the sources producing electromagnetic

7   radiation that is linearly polarized in a predetermined

8   first direction, and

9   an image forming device for forming an image of

10   electromagnetic radiation reflected from the part viewed

11   through a linear polarization filter oriented for passing

12   electromagnetic radiation that is linearly polarized in a

13   second direction that is substantially orthogonal to the

14   first direction,

15   whereby in the formed image, an improved contrast

16   between the metallic objects and the background is

17   produced.

1   8. The apparatus as claimed in Claim 7, further

2   comprising a computer vision system for recognizing the

3   metallic objects in the formed image.

1   9. The apparatus as claimed in Claim 7, wherein the
2   electromagnetic radiation is light, and the image forming
3   device is a camera.

1   10. The apparatus as claimed in Claim 8, wherein the
2   electromagnetic radiation is light, and the image forming
3   device is a camera of the computer vision system.

1   11. The apparatus as claimed in Claim 7, wherein the
2   part is a ball grid array, the light colored background is
3   dielectric, and the metallic objects are balls arranged in
4   an array carried by the dielectric.

1   12. The apparatus as claimed in Claim 8, wherein the
2   part is a ball grid array, the light colored background is
3   dielectric, and the metallic objects are balls arranged in
4   an array carried by the dielectric.

1   13. The apparatus as claimed in Claim 8, further
2   comprising a manipulator for positioning the part on a
3   circuit board or card with recognized metallic objects of
4   the part in registration with contact pads of the board or
5   card.

1   14. The apparatus as claimed in Claim 12, further
2   comprising a manipulator for positioning the ball grid
3   array on a circuit board or card with recognized balls of
4   the ball grid array in registration with contact pads of

5   the board or card.

1   15. A circuit board or card on which is surface
2   mounted a part that has been recognized in accordance with
3   the method of Claim 2, such surface mounting being with
4   recognized metallic objects of the part in registration
5   with contact pads of the board or card.

1   16. A circuit board or card on which is surface
2   mounted a ball grid array that has been recognized in
3   accordance with the method of Claim 6, such surface
4   mounting being with recognized balls of the ball grid array
5   in registration with contact pads of the board or card.